

PD-H118A - 18" HORN-LOADED SUBWOOFER

SUITABLE FOR USE WITH: **PD.186/2** | **PD.185N02** | **PD.185C001**

ENCLOSURE CONSTRUCTION HINTS & TIPS

MATERIAL

We recommend the use of a multi-layer, void free, exterior grade birch ply. Thickness should be at least 18mm (3/4") and 24mm (1") for larger enclosures. Other kinds of wood (e.g. Pine, blackboard and hardwoods) may be used for construction, but the resulting strength and acoustic properties will be affected. As a cheaper option Medium Density Fibreboard (MDF) or flooring-grade chipboard can be used where the cabinet is to be permanently installed in a dry situation.

METHOD / TECHNIQUE

We recommend lapped joints, however simple butt joints are adequate, both types of joint should be airtight. All joints should be bonded with a sufficient bead of glue to ensure good adhesion (PVA or PU glue is suitable) and screwed at 200mm (8") centres with 4.2mm or 4.8mm (No.8 or 10 gauge) x 60mm (2 3/8") screws. A high quality wood screw should be used. Make sure there's a clearance hole in the wood that the screw head bears down on, so the pieces of wood are pulled fully together. To curtail major resonances (e.g. spurious buzzing noises), major panels should be stiffened with battens; off-cuts are often used, however we recommend purpose made braces for optimum performance. These should be glued and screwed into place. The arrangement must be consistent (between like cabinets) to ensure performance remains the same. To reduce panel resonance further a larger number of smaller braces can be used.

HOLE CUTTING

Fixing holes to mount the loudspeaker may be defined using the holes in the driver frame. The loudspeaker is then mounted using bolts and 'T' nuts supplied. All other holes for connectors, handles, etc should be cut before any other parts are mounted.

PASSIVE CROSSOVERS

Unless otherwise stated, cabinet designs are passive units, and adequate external signal processing arrangements should be made to filter out signals.

Where used, crossover networks should be mounted for ease of access, but at the same time they should be kept away from the immediate vicinity of the driver(s)' magnets. Crossover PCBs need to be firmly secured; buzzing or rattling will impair sound quality. If a crossover breaks loose in transit, the crossover and/or drivers may be damaged. Self-tapping screws provide the suitable fixing, taking care to ensure a tight fit. Screw cups spread out the pressure exerted on the PCB, reducing the chances of damage if the cabinet is dropped from a height. Rubber grommets can be used to space the crossover PCB off the cabinet wall, and can protect the PCB/components from the resulting shock.

CONNECTORS

Some connectors leak air. Be sure to check the connectors are suitable for the application intended.

INTERNAL WIRING

Wiring should be clearly coded so correct polarity is visible. We recommend red and black for hot (+ve) and cold (-ve) respectively. When the enclosure is first tested, use a battery or polarity ('phase')-checker set to ensure that the driver(s)' cones move forwards (outwards) when the hot (+ve) input terminal is driven positive.

ACOUSTIC TREATMENT

The inside of the enclosure should be lagged with an absorptive material, to dampen internal reflections and standing waves. Recommended materials are BAF or a similar cushion filler. For best results staple the wadding to the cabinet walls. The amount of wadding will affect the acoustic performance of the enclosure and is best adjusted to give the desired response. Plans will indicate where any wadding is best positioned.

DRIVE UNITS

Before mounting the drive units, the internal wing, connectors (and passive crossovers where applicable) should be fitted. Make sure the cabinet interior is clear and free from swarf and waste. Drive units are fitted with a foam sealing strip to provide airtight conditions when bolted down. Make sure this is in place and intact before fixing the driver. The driver's fixing bolts should be tightened in stages, in a diagonal sequence to avoid possible deformation of the chassis or baffle.

Further information about our drive units can be found at <http://www.precision-devices.com>



COMPONENTS & SPECIFICATIONS

- High Performance, 1x 18", Horn-loaded Subwoofer System.
- x3 Suitable PD Driver Loading Options.

A wide range of speaker cabinet accessories are available from specialist suppliers. Wheels, grilles, corner protectors, paint, connectors and handles should be carefully fitted to avoid air leaks or weakening the enclosure.

Important Note: For optimum performance we recommend using the enclosure in multiples of no less than two.

Full driver specifications can be found at:
<http://www.precision-devices.com>

PD.186/2 SUB BASS DRIVER

SPECIFICATIONS

Nominal Diameter	18" / 457.2 mm
Voice Coil Diameter	5.0" / 127 mm
Power Rating	700 W (A.E.S.)
Peak Power (6dB Crest Factor)	2800 W (A.E.S.)
Sensitivity (1w - 1m)	95 dB
Frequency Range	30 Hz - 2 kHz
Recommended Enclosure Vol.	100 - 350 Litres
Resonance	34.18 Hz
Voice Coil Winding Depth	25 mm / 0.98"
Magnet Gap Depth	9 mm / 0.35"
Flux Density	0.95 Tesla
Magnet Material	Ceramic
Voice Coil Material	Copper

THIELE SMALL PARAMETERS (8Ω MODEL)

Fs	34.18 Hz
Re	6.19 Ω
Qms	10.77
Qes	0.55
Qts	0.52
Le	1.95 mH
L2	3.06 mH
R2	8.07 Ω
Vas	192.15 litres
Mms	203.93 g
Sd	1134.11 cm ²
Cms	106.67 μm/N
BL	22.18 T/m
Xmax	10.5 mm
Vd	1.2 litres
Ref. Efficiency	2.05 %

MOUNTING INFORMATION

Chassis Shoulder Diameter	414.5 mm
Outer Bolt Circle	6x M8 on 455 mm PCD
Inner Bolt Circle	N/A

PD.185N02 SUB BASS DRIVER

SPECIFICATIONS

Nominal Diameter	18" / 457.2 mm
Voice Coil Diameter	5.0" / 127 mm
Power Rating	1100 W (A.E.S.)
Peak Power (6dB Crest Factor)	4400 W (A.E.S.)
Sensitivity (1w - 1m)	98 dB
Frequency Range	35 Hz - 1 kHz
Recommended Enclosure Vol.	90 - 220 Litres
Resonance	35.24 Hz
Voice Coil Winding Depth	28 mm / 1.10"
Magnet Gap Depth	12 mm / 0.47"
Flux Density	1.18 Tesla
Magnet Material	Neodymium
Voice Coil Material	Copper

THIELE SMALL PARAMETERS (8Ω MODEL)

Fs	35.24 Hz
Re	4.7 Ω
Qms	22.06
Qes	0.25
Qts	0.24
Le	0.57 mH
L2	1.5 mH
R2	60.87 Ω
Vas	178.281 Litres
Mms	219.92 g
Sd	1164.16 cm ²
Cms	0.09 mm/N
BL	30.55 T/m
Xmax	12 mm / 22 mm
Vd	1.397 Litres
Ref. Efficiency	3.03%

MOUNTING INFORMATION

Chassis Shoulder Diameter	414.5 mm
Outer Bolt Circle	6x M8 on 455 mm PCD
Inner Bolt Circle	N/A

PD.185C001 SUB BASS DRIVER

SPECIFICATIONS

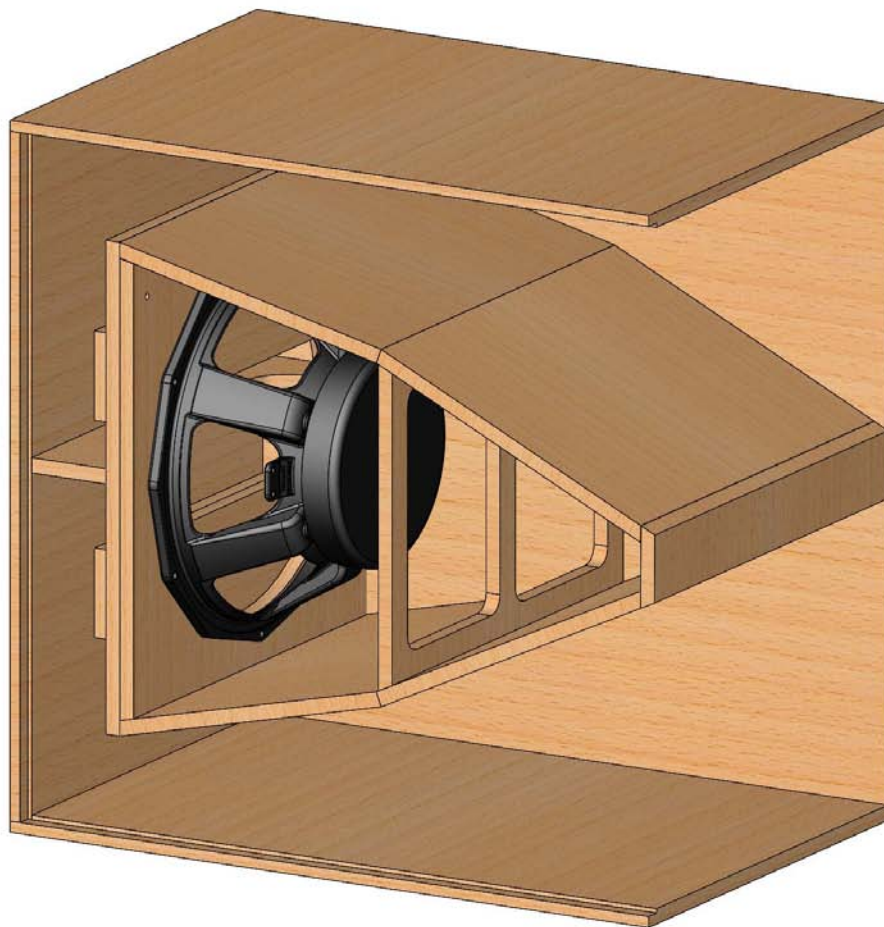
Nominal Diameter	18" / 457.2 mm
Voice Coil Diameter	5.0" / 127 mm
Power Rating	900 W (A.E.S.)
Peak Power (6dB Crest Factor)	3600 W (A.E.S.)
Sensitivity (1w - 1m)	97 dB
Frequency Range	30 Hz - 300 Hz
Recommended Enclosure Vol.	125 - 200 Litres
Resonance	32 Hz
Voice Coil Winding Depth	25.00 mm / 0.98"
Magnet Gap Depth	9.0 mm / 0.35"
Flux Density	0.96 Tesla
Magnet Material	Neodymium
Voice Coil Material	Copper

THIELE SMALL PARAMETERS (8Ω MODEL)

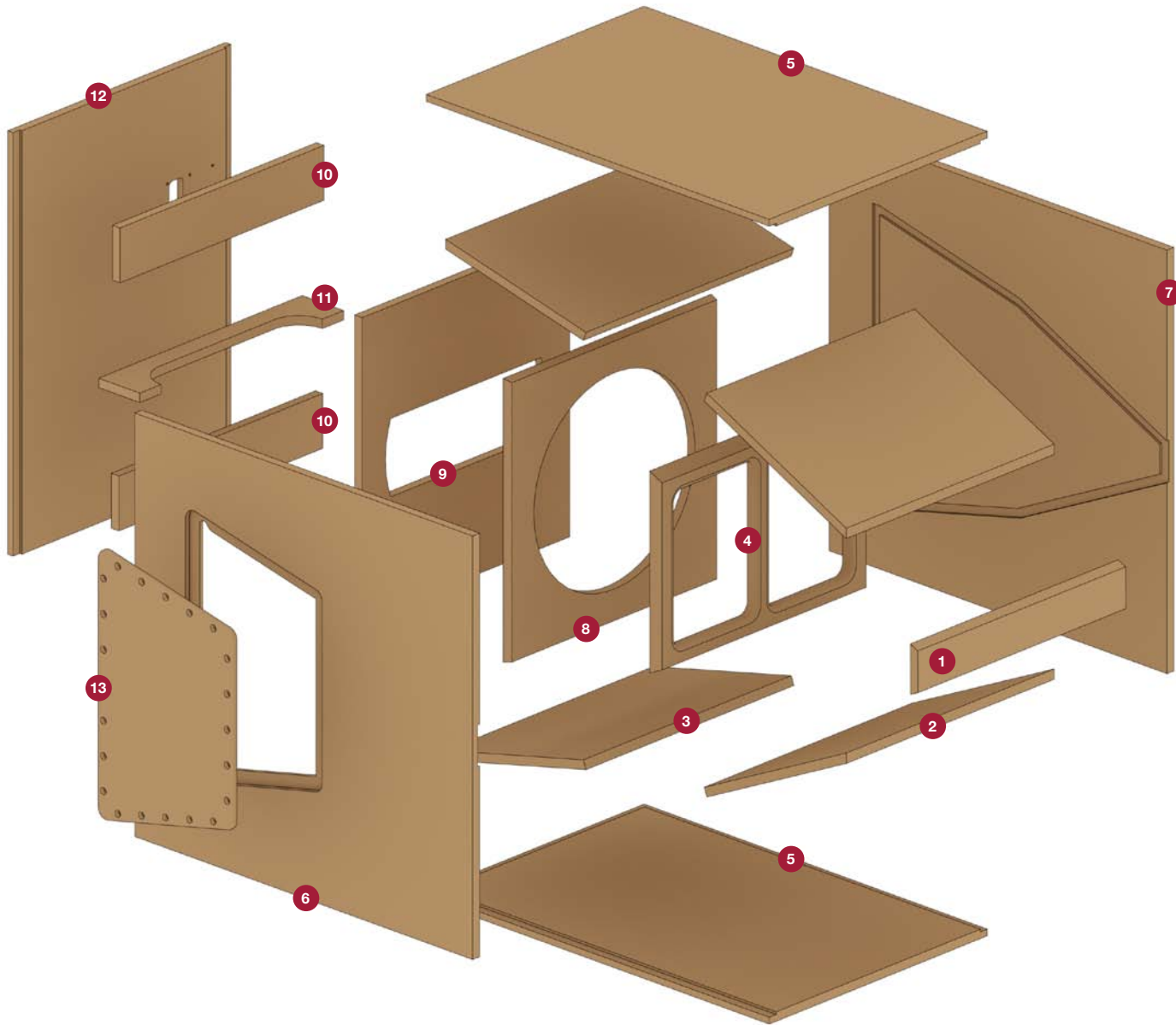
Fs	32 Hz
Re	5.9 Ω
Qms	8.42
Qes	0.423
Qts	0.403
Le (@ 1 kHz)	3.80 mH
Le (@ 10 kHz)	1.589 mH
Vas	302 Litres
Mms	157.20 g
Sd	1162 cm ²
Cms	157.40 μm/N
BL	21.00 T/m
Xmax	10.50 mm
Vd	1.220 Litres
Ref. Efficiency	2.26%
EBP	75.65 Hz

MOUNTING INFORMATION

Chassis Shoulder Diameter	414.4 mm
Outer Bolt Circle	6x M8 on 456 mm PCD
Inner Bolt Circle	N/A



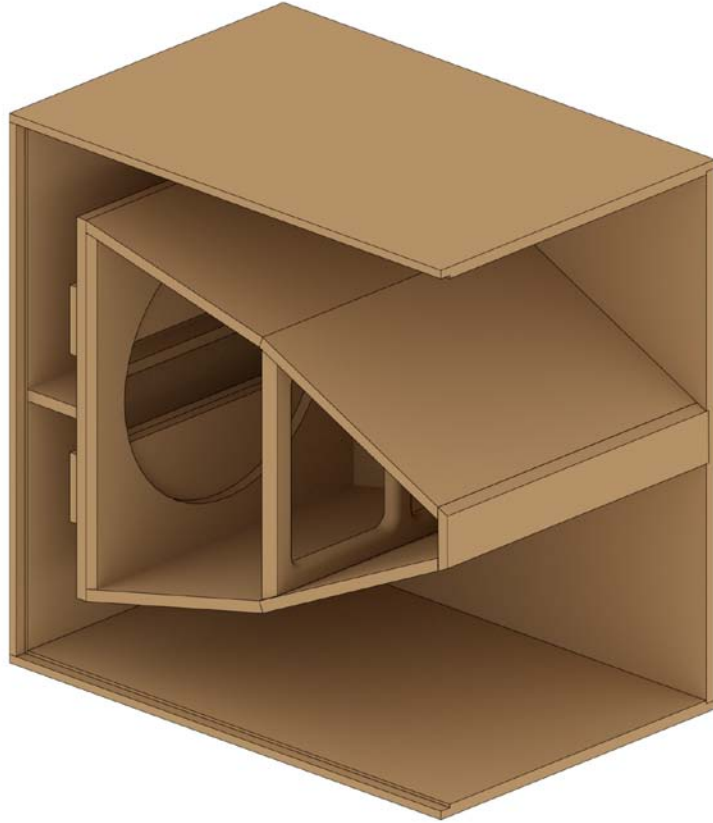
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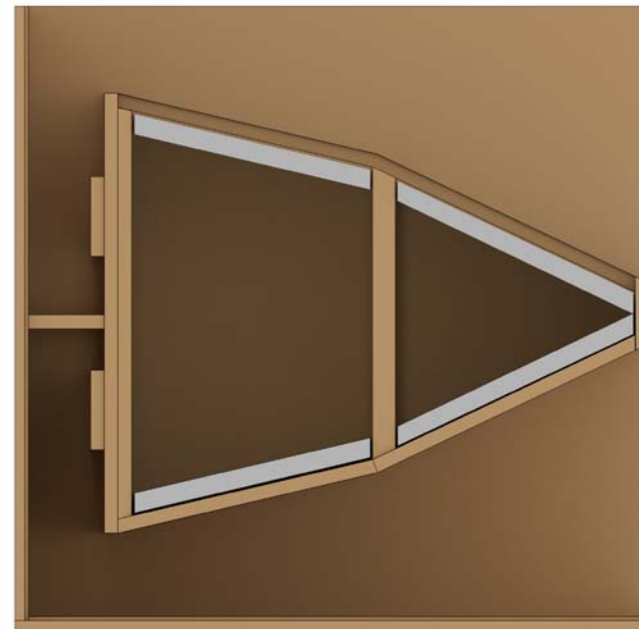
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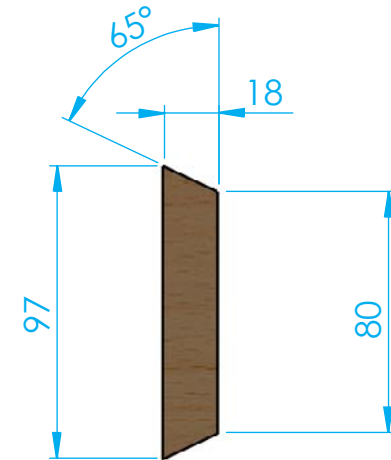
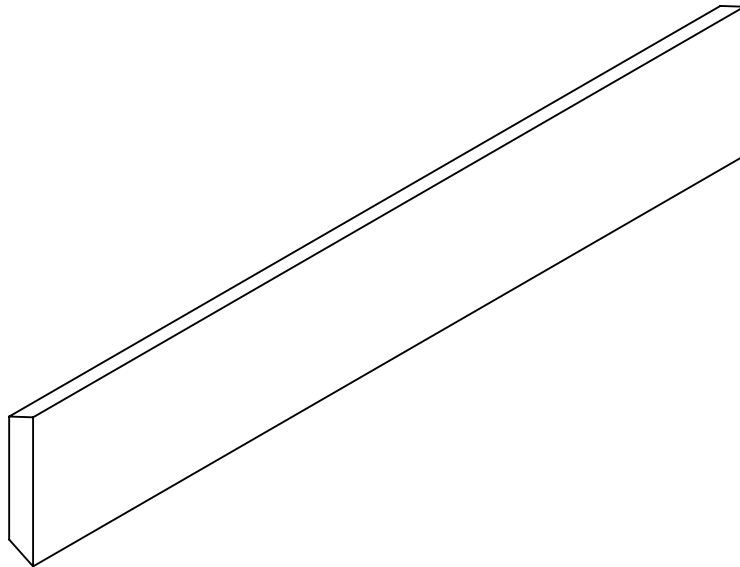
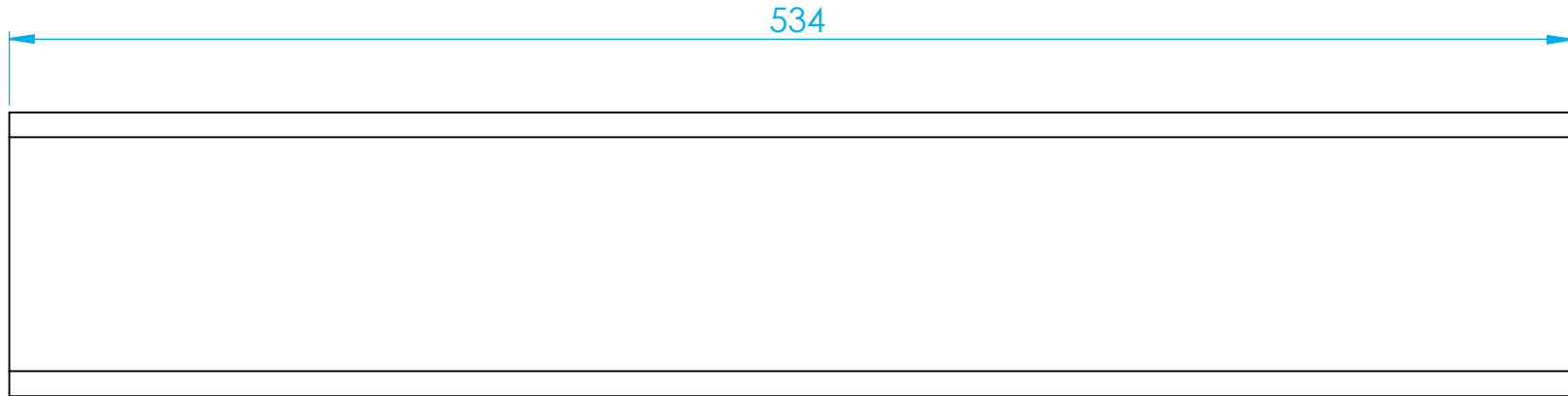
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NOTES:	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 6 OF 22



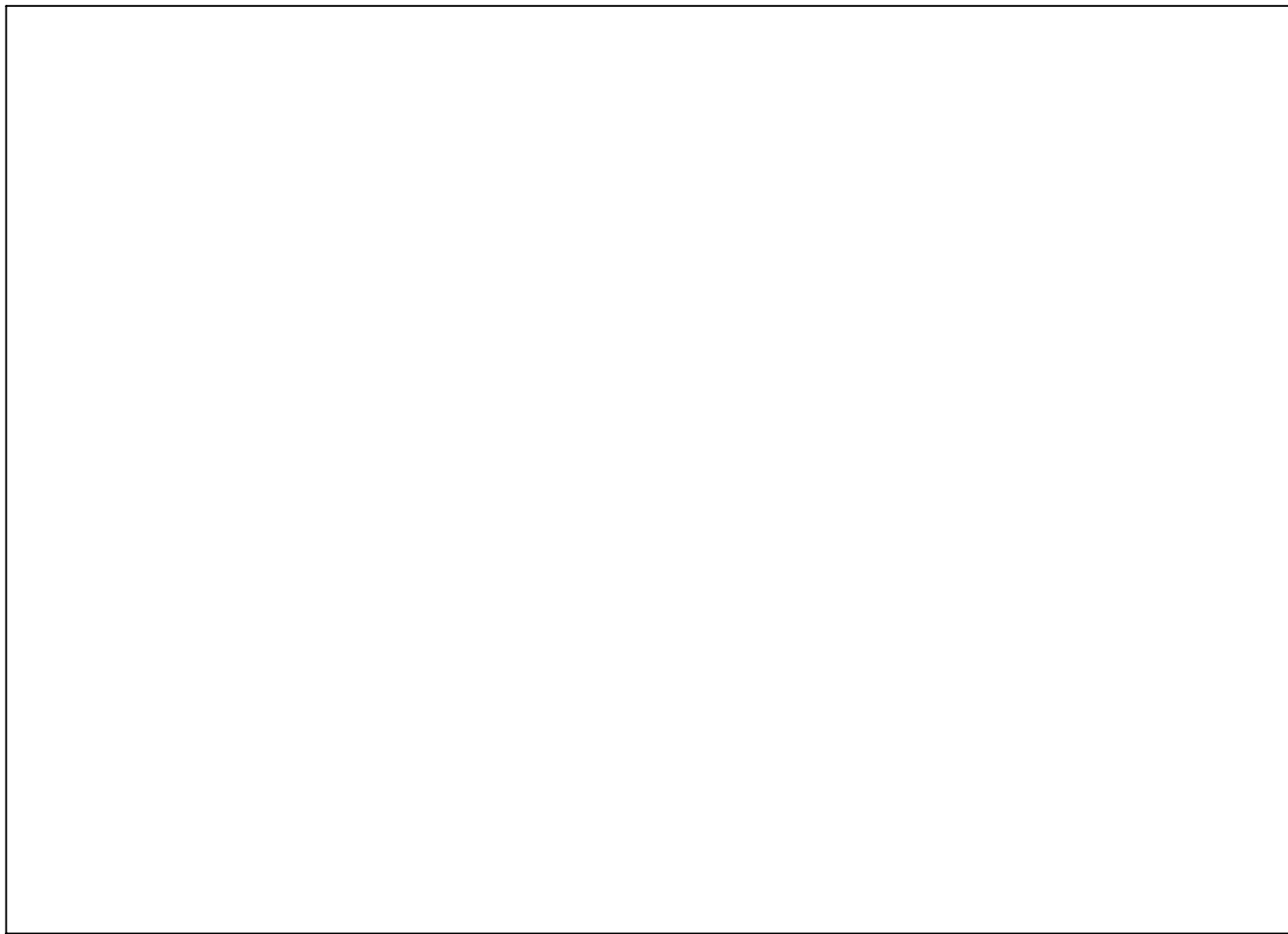
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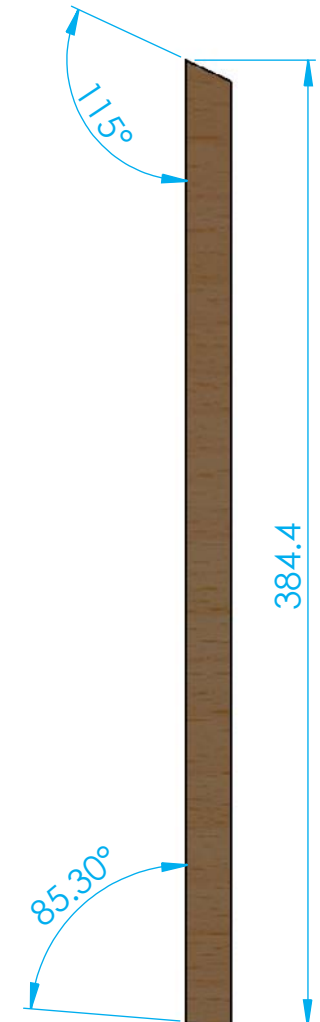
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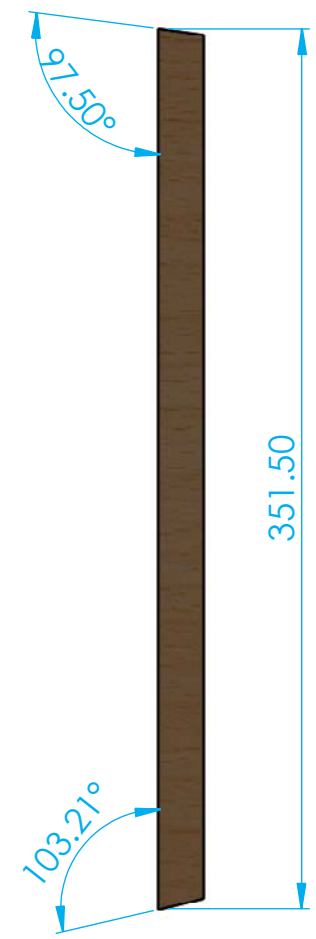
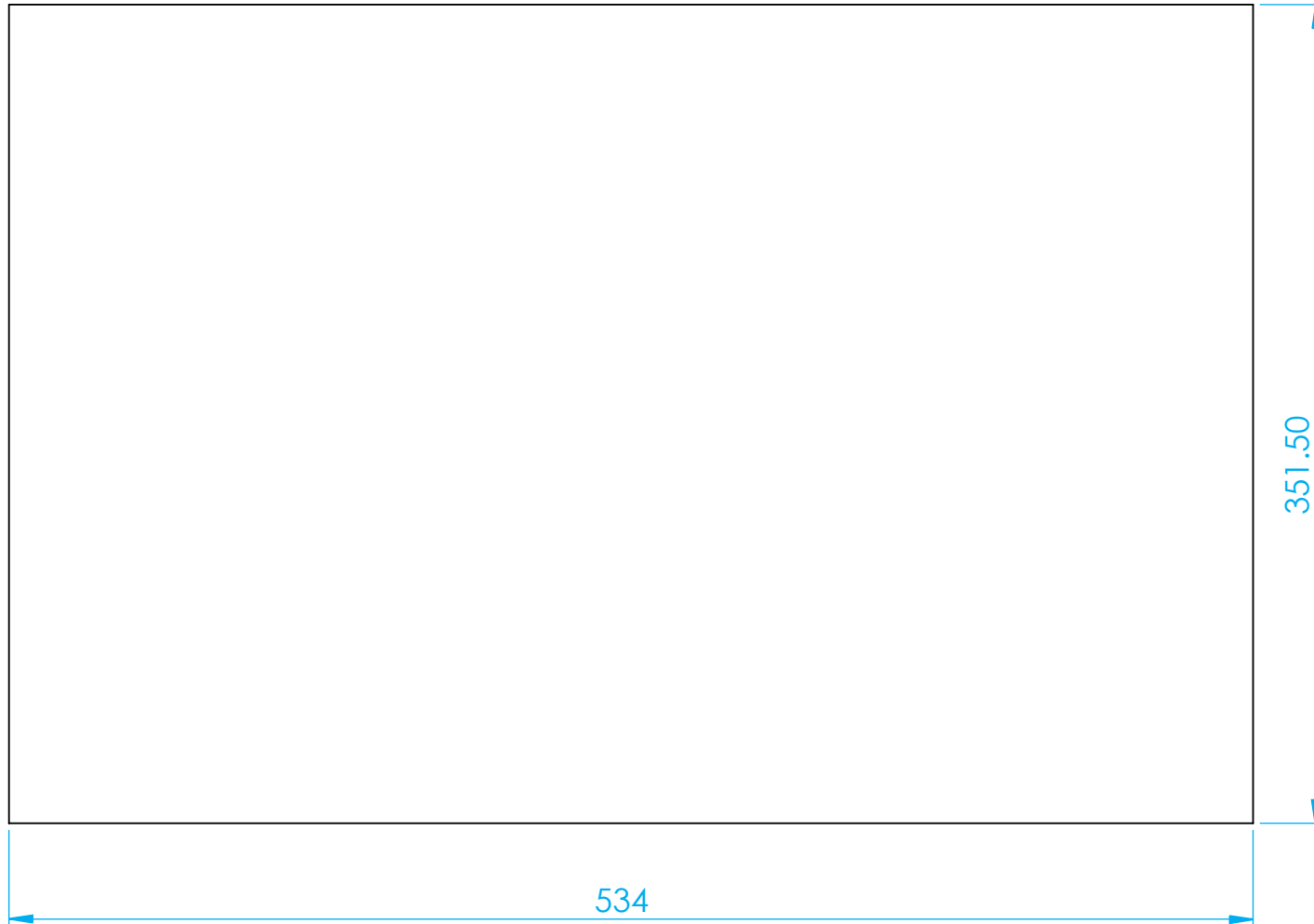
PROJECT: PD-H118A		PART: 1. Horn Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 9 OF 22



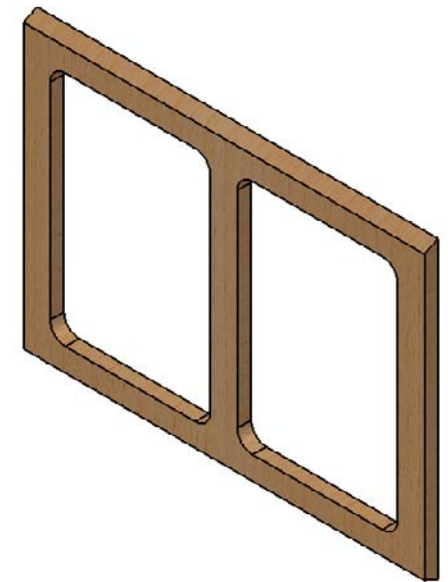
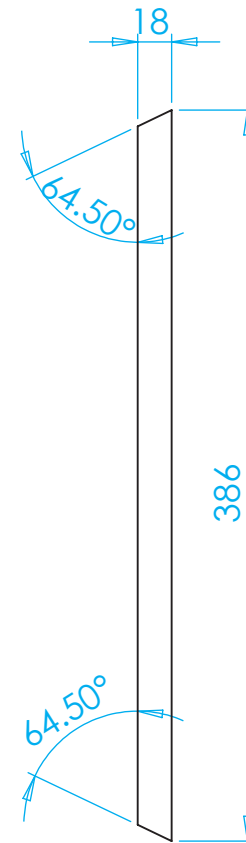
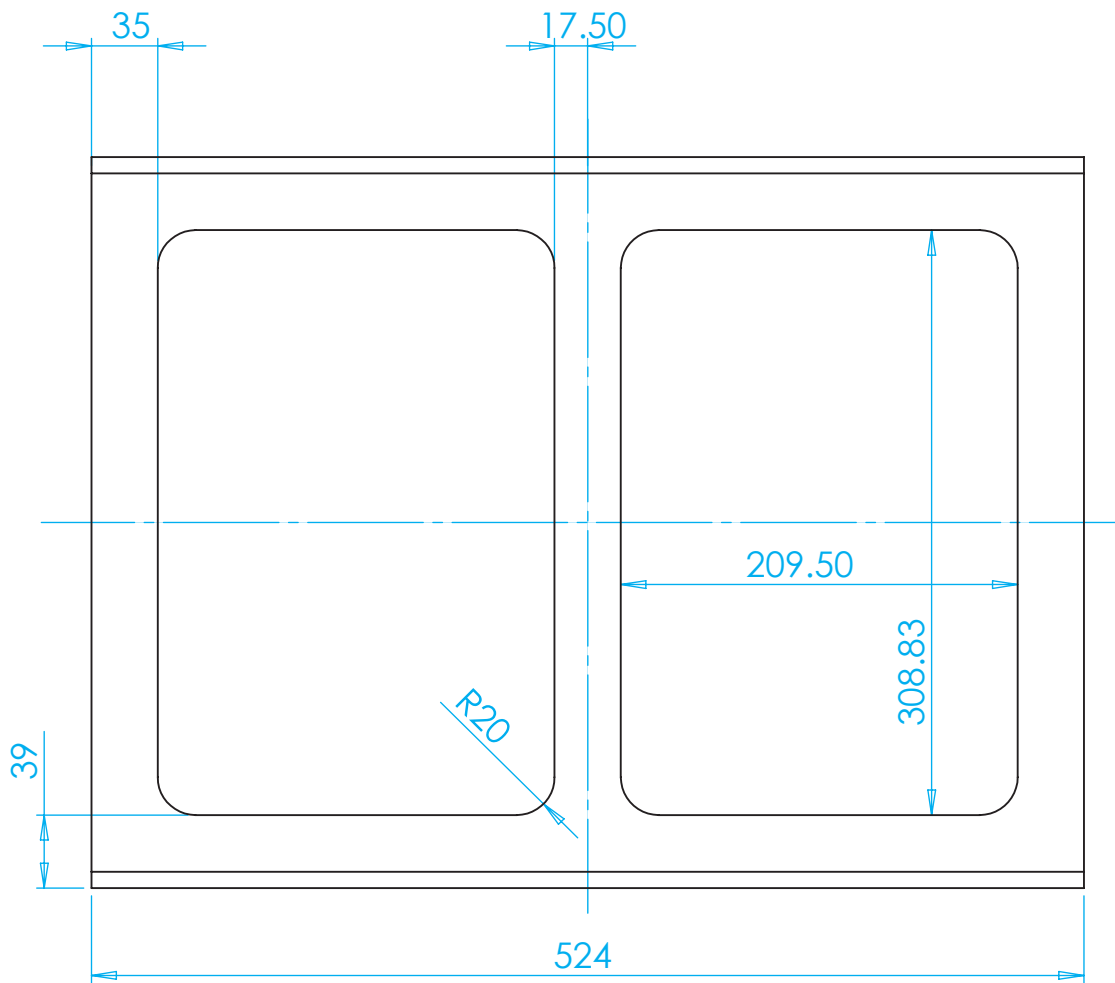
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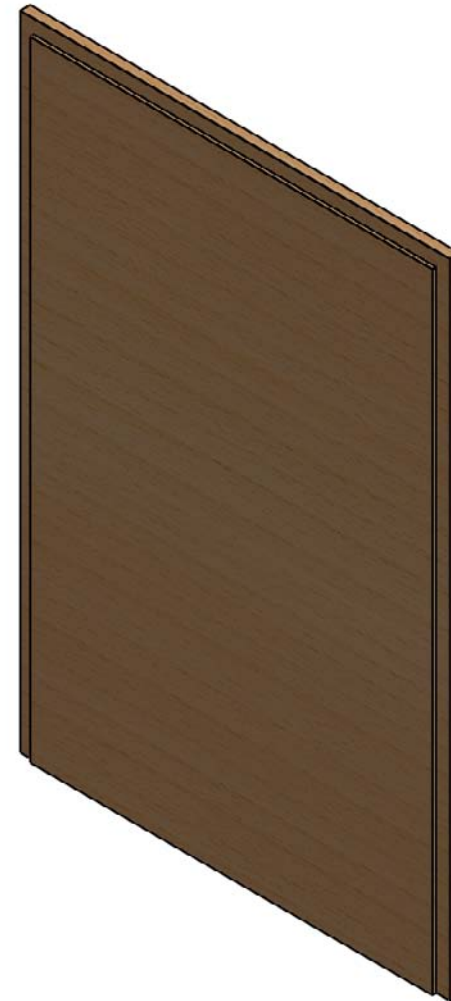
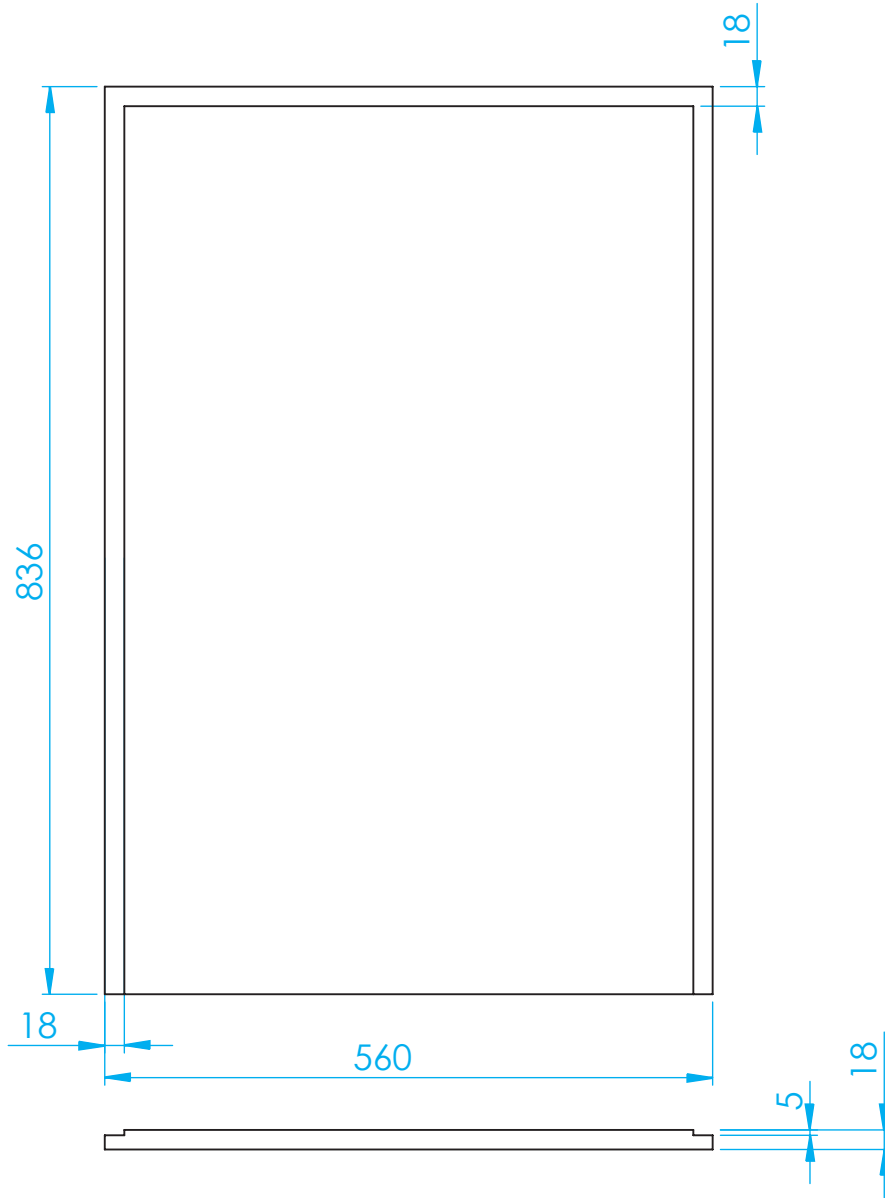
PROJECT: PD-H118A		PART: 2. Horn Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 10 OF 22



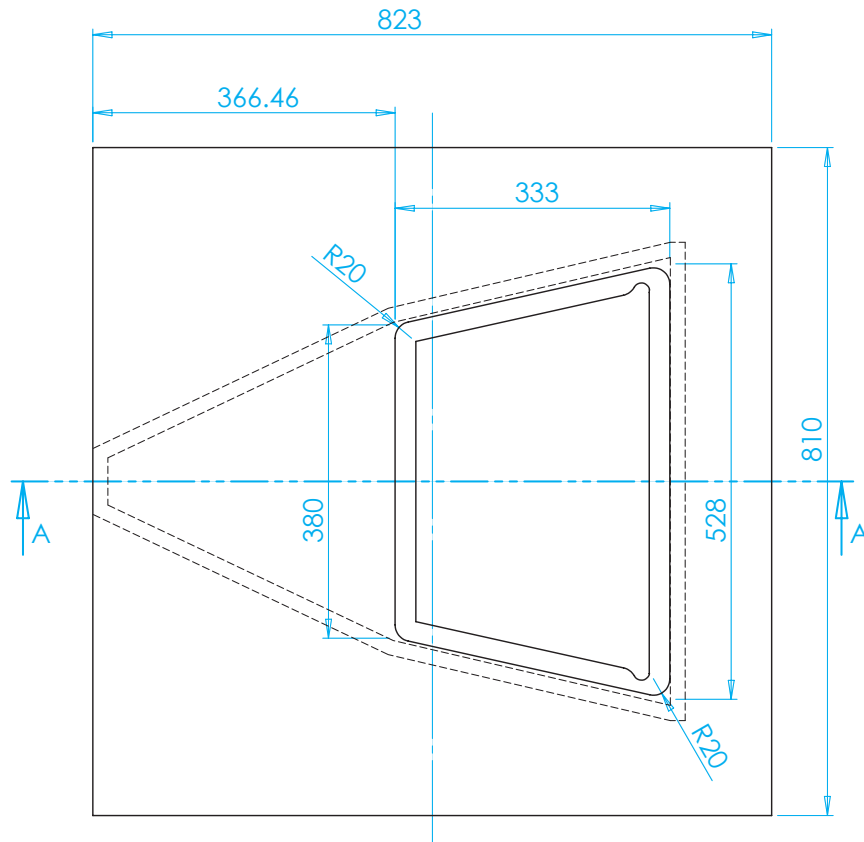
PROJECT: PD-H118A		PART: 3. Horn Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 11 OF 22



PROJECT: PD-H118A		PART: 4. Internal Brace		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 12 OF 22



PROJECT: PD-H118A		PART: 5. Side Wall		
NOTES: 18mm Ply. x2 Required.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4 , HOLES $+0.1/-0.0$, NONE - CUMULATIVE	SHEET: 13 OF 22

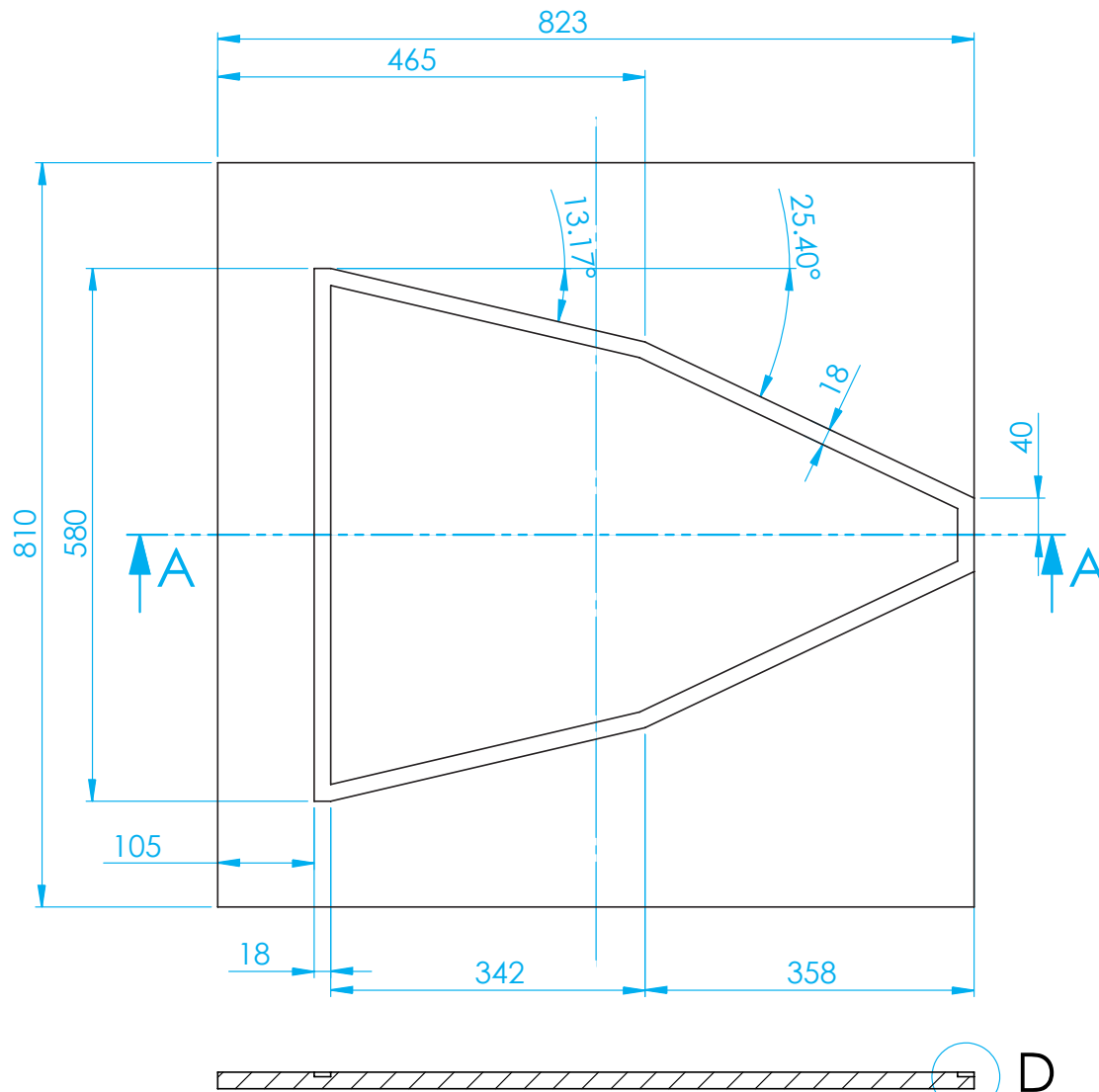


SECTION A-A
SCALE 1 : 7

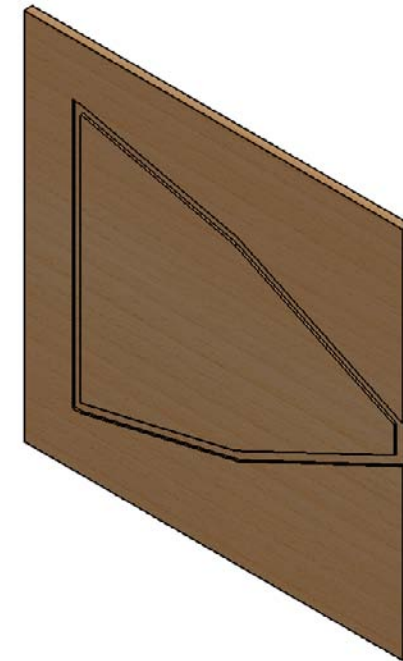


DETAIL D
SCALE 2 : 7

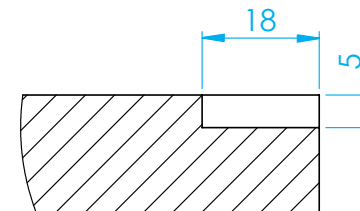
PROJECT: PD-H118A		PART: 6. Top Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 14 OF 22



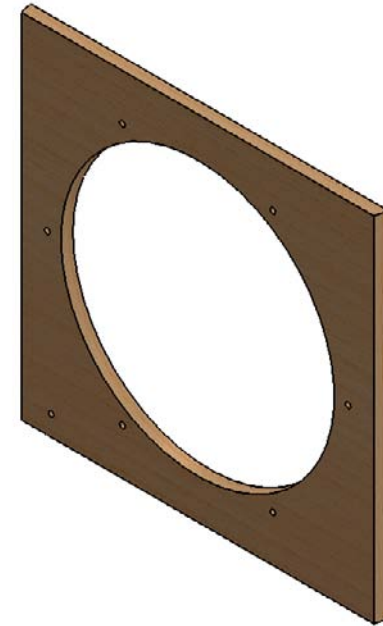
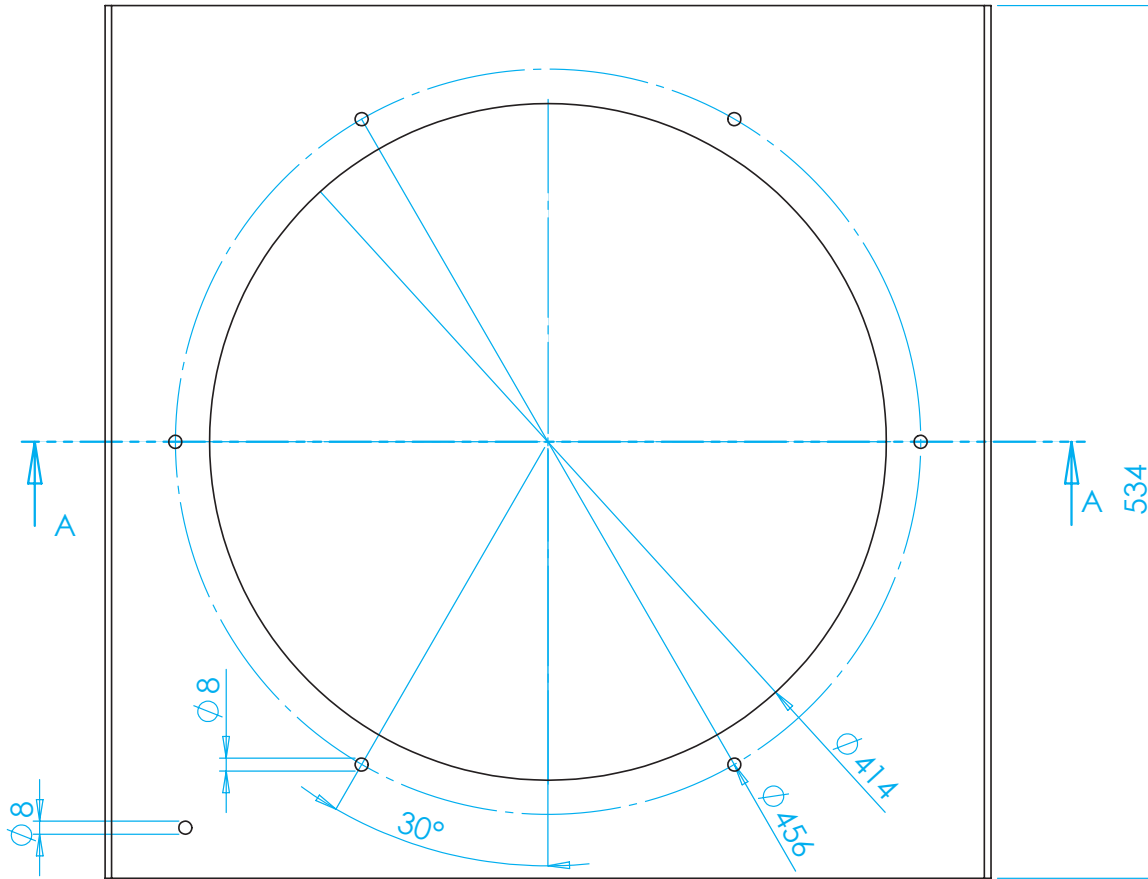
SECTION A-A
SCALE 1 : 7



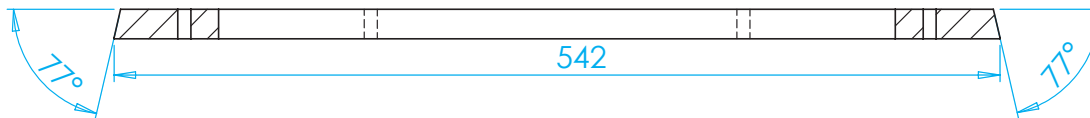
DETAIL D
SCALE 1 : 1



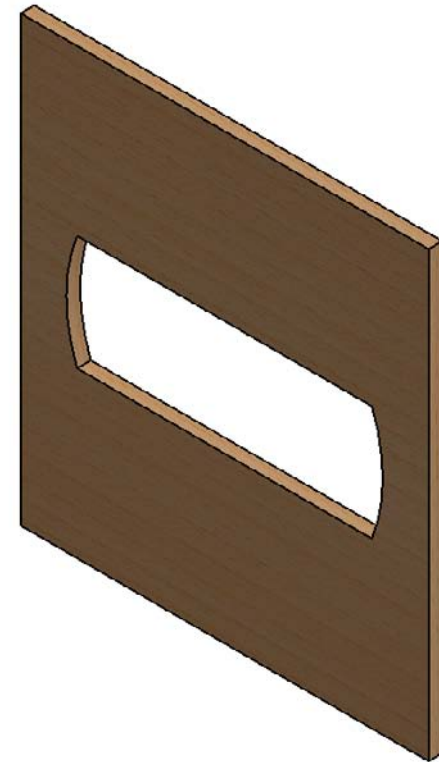
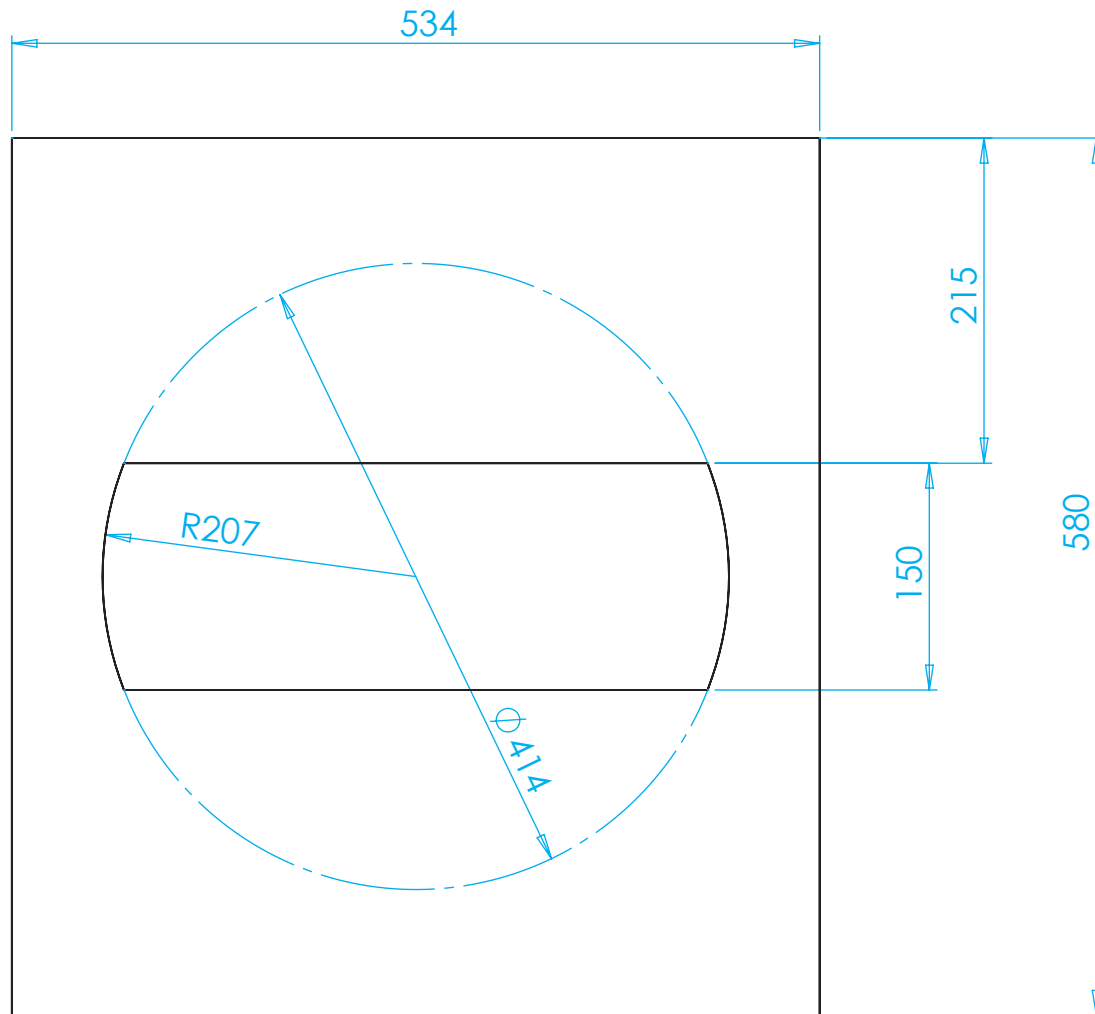
PROJECT: PD-H118A		PART: 7. Bottom Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 15 OF 22



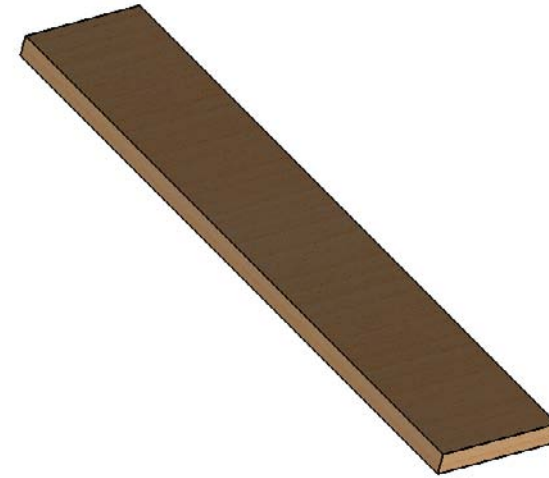
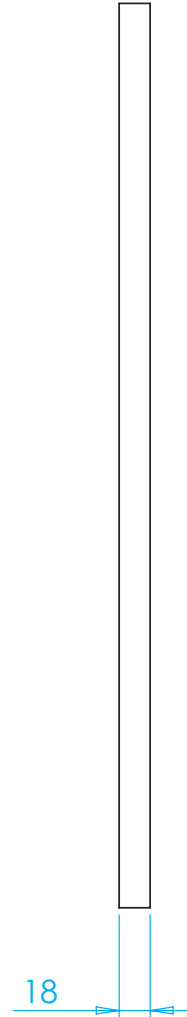
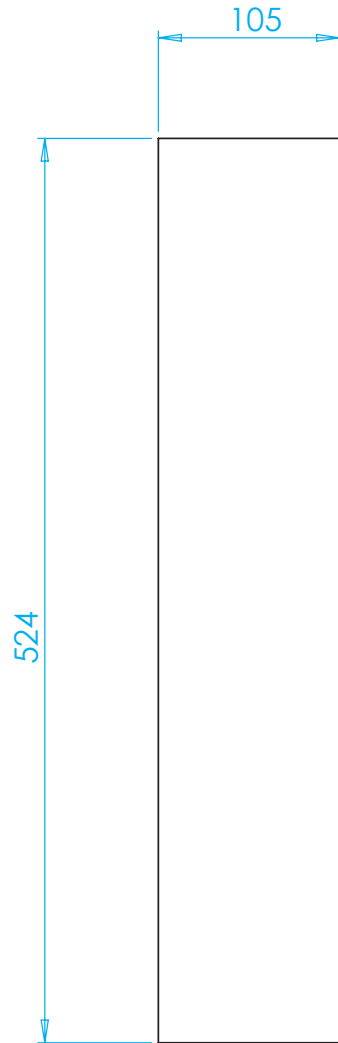
SECTION A-A
SCALE 1 : 4



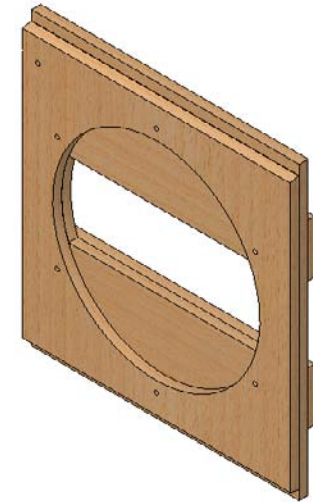
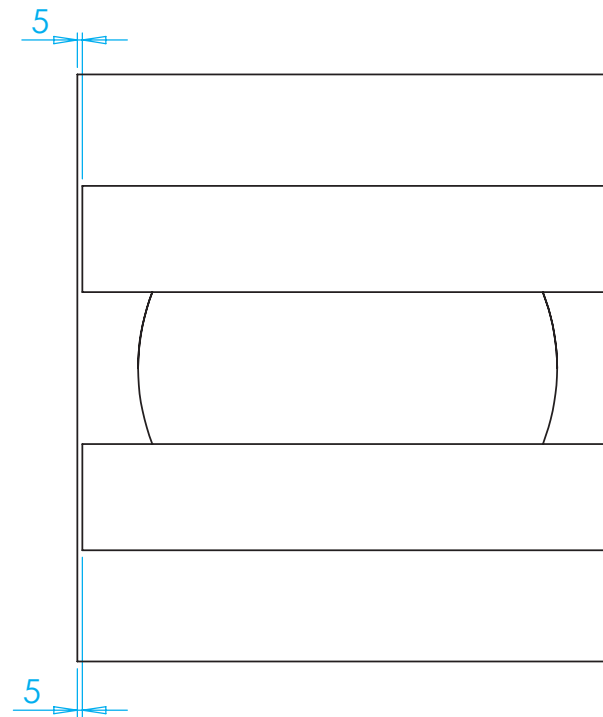
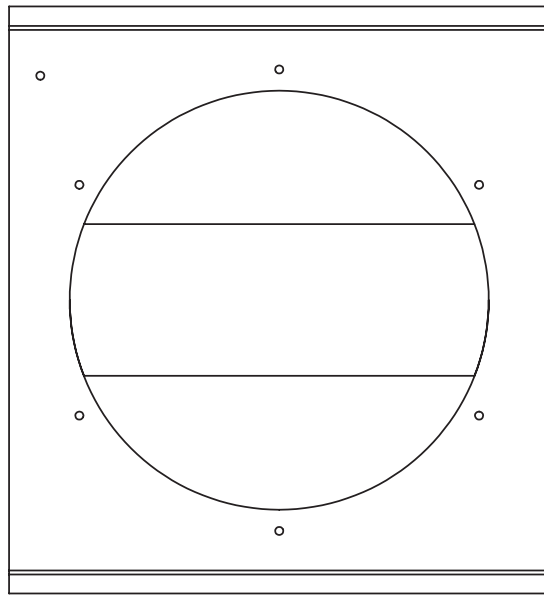
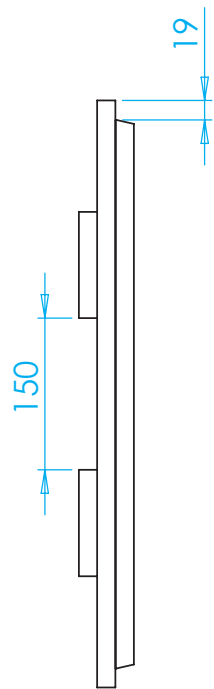
PROJECT: PD-H118A		PART: 8. Driver Mounting Baffle		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 16 OF 22



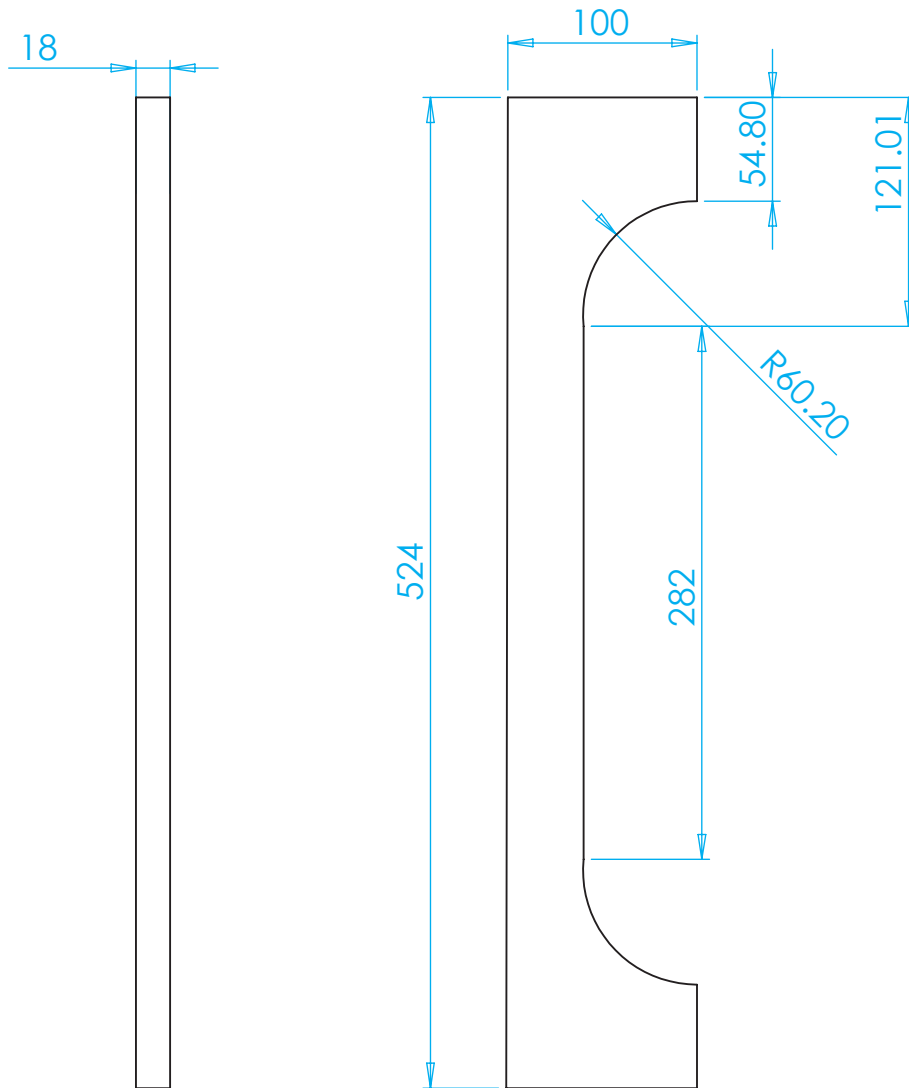
PROJECT: PD-H118A		PART: 9. Baffle Slot Port		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 17 OF 22



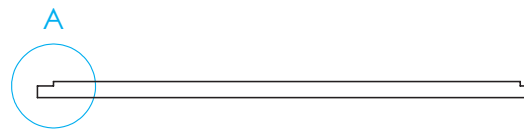
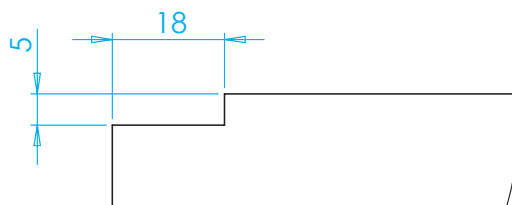
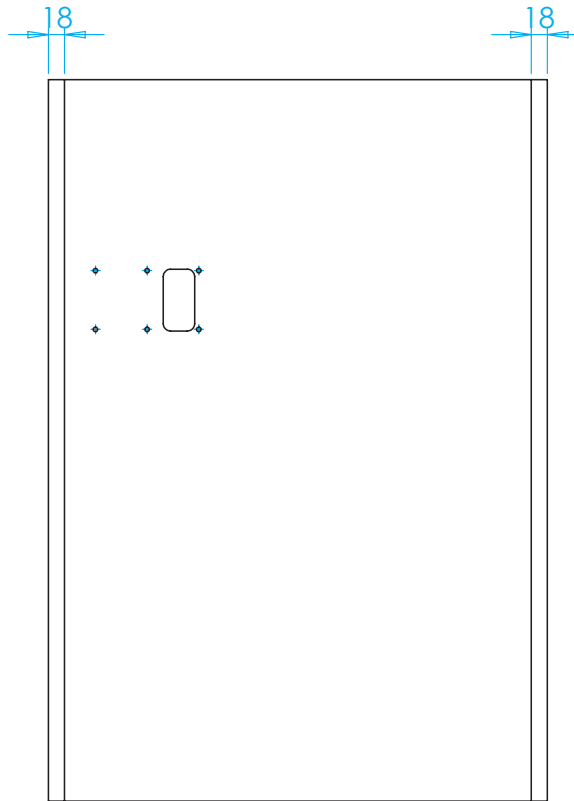
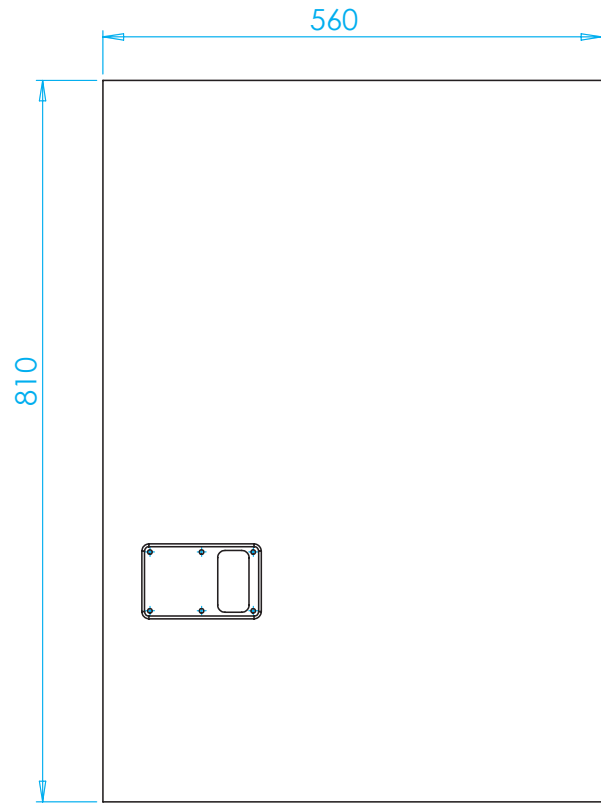
PROJECT: PD-H118A		PART: 10. Baffle Slot Port Brace		
NOTES: 18mm Ply. x2 Required.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 18 OF 22



PROJECT: PD-H118A		PART: Driver Mounting Panel Assembly		
NOTES:	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 19 OF 22



PROJECT: PD-H118A		PART: 11. Back Brace		
NOTES: 18mm Ply. x2 Required.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 20 OF 22



DETAIL A
SCALE 1 : 1

PROJECT: PD-H118A		PART: 12. Back Panel		
NOTES: 18mm Ply.	REVISION: 1.0	SCALE: N/A	DIMENSIONS: MM TOLERANCE LINEAR ± 0.4, HOLES +0.1/-0.0, NONE - CUMULATIVE	SHEET: 21 OF 22

